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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/527,068

01/04/2006

Yukinori Ochiai

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EXAMINER

LEE, SIN J

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

06/05/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/527,068	Applicant(s) OCHIAI ET AL.	
	Examiner Sin J. Lee	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2, 4 and 5 is/are rejected.
- 7) ☒ Claim(s) 3 and 6-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicants canceled claim 1.
2. In view of the certified English translation of the Japanese priority document, previous 102(a) rejection over Ishida et al (Jpn. J. Appl. Phys., Vol.42 (2003), pg.3913-3916) is hereby withdrawn.
3. Due to newly cited references, the following rejections are made non-final.

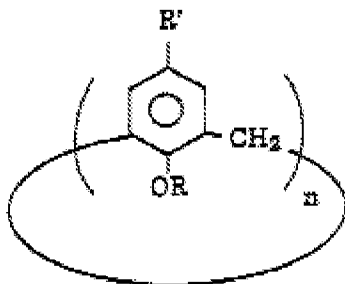
Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mita (JP 4-15232 and its English abstract provided by JPO).

Mita teaches a solution containing a solvent and a calixarene compound shown below;



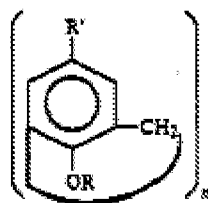
Mita teaches that n is 4-8; R' is H, tert butyl, -Br, -SO₃Na, -CH₂NH₂, -N=NAr, **-CH₂Cl**, -COAr, NO₂, -C₆H₅COCH=CH₂; R is H, **-CH₃**, -COCH₃, -(CH₂)_nCH₃, -CH₂Ar, -

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CH_2CHCH_2 , $-\text{SiCH}_3$, $-\text{CH}_2\text{COOH}$ or the like. Based on this teaching, it would have been obvious to one skilled in the art to have n to be 4, R' to be $-\text{CH}_2\text{Cl}$ and R to be $-\text{CH}_3$ with a reasonable expectation of obtaining a film of calixarene. Mita applies this solution onto a substrate by spin-coating, and the film is baked to remove the remaining solvent. Thus, Mita renders obvious present inventions of claims 2 and 5.

6. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mita (5,143,784).

Mita teaches a calixarene derivative useful for forming a resist pattern using ion beam, electron beam or X-ray (see abstract). Mita teaches (col.5, lines 40-68, col.6, lines 1-2) the following calixarene derivative;



(III)

where R is $-\text{H}$, $-\text{CH}_3$, $-\text{COCH}_3$, $-(\text{CH}_2)_m\text{CH}_3$, where m is an integer from 1 to 9, $-\text{CH}_2\text{CHCH}_2$, $-\text{SiCH}_3$, CH_2COOH , $-\text{COAr}$ or $-\text{CH}_2\text{Ar}$, where Ar represents aryl group, R' is $-\text{H}$, an alkyl group having 2 to 10 carbon atoms, aryl group, $-\text{Br}$, $-\text{SO}_2\text{Na}$, $-\text{CH}_2\text{NH}_2$, CH_2Cl , $-\text{NO}_2$, $-\text{N}=\text{NAr}$, $-\text{COAr}$ or

$-\text{ArCOCH}=\text{CH}_2$, where Ar represents aryl group, and n is an integer from 4 to 8.

Based on this teaching, it would have been obvious to one skilled in the art to have n to be 4, R' to be $-\text{CH}_2\text{Cl}$ and R to be $-\text{CH}_3$ with a reasonable expectation of obtaining a resist material containing a calixarene derivative. Thus, Mita renders obvious present inventions of claims 2 and 5.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mita (5,143,784) in view of Fitzgerald et al (5,607,816).

Even though Mita does not explicitly mention the use of the organic polymer compound in his resist composition, it is very well known in the art that a photoresist composition typically comprises a polymeric binder as evidenced by Fitzgerald, col.8, lines 20-26. It would have been obvious to one skilled in the art to include a polymeric binder, which is a typically used component in a photoresist composition, into Mita's composition because Mita's composition is also a resist composition. Thus, Mita in view of Fitzgerald render obvious present invention of claim 4.

Allowable Subject Matter

8. Claims 3 and 6-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Both of the references cited above do not teach or suggest present compound of formula (III) or (IV) as claimed in present claim 3. Also, those solvents of claim 6 are not taught or suggest in either of those references.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sin J. Lee/
Primary Examiner, Art Unit 1795
June 3, 2008